

S-E-C-R-E-T

CIA/BI GB 66-11
September 1965

CLIMATIC AND SOIL DATA ON ORENBURG
(51°49'N-55°06'E)

I. Climate

Orenburg is located on the chernozem steppes west of the southern Urals. Its climate is characterized by long cold winters, short warm summers, low precipitation, and moderate snow cover. Its temperature regime is somewhat similar to that of the area between eastern Montana and central Minnesota, but Orenburg has considerably drier summers.

The average monthly surface air temperatures (see Table 1) range from 5.0°F in the coldest month (January) to 71.6°F in the warmest month (July), and extreme temperatures of -43.6°F and 102.2°F have been recorded. The average daily temperature is below freezing from early November to early April, and it is above 59°F from mid-May to early September.

The annual precipitation (see Table 2) averages 15.2 inches, about 46 percent occurring during the five warmest months, May through September. The maximum monthly precipitation normally occurs in June, with an average of 1.8 inches, and the minimum in March and April, each with an average of 0.8 inch. The predominant forms of precipitation are heavy showers and thunderstorms in summer and snow in winter. Snowfall can be expected from early October through April. A snow cover begins to form in early November and usually reaches its maximum depth -- about 20.5 inches as a long-term average -- in early March. Thawing begins in late March, and by mid-April the snow cover has disappeared.

GROUP 1
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Table 1

Temperature a/
(in degrees Fahrenheit)

	<u>Average</u>	<u>Average Difference Between Daily Extremes</u>	<u>Maximum Difference Between Daily Extremes</u>
January	5.0	14.6	24.7
February	6.3	18.4	34.6
March	18.1	20.3	30.8
April	39.7	25.4	38.9
May	58.5	28.3	37.6
June	67.5	28.8	39.1
July	71.6	27.2	40.9
August	67.6	29.7	45.7
September	55.6	29.7	38.2
October	40.5	26.6	40.9
November	24.6	18.4	27.9
December	10.8	13.5	26.8
Annual	38.8

Absolute minimum: -43.6

Absolute maximum: 102.2

Average daily temperature exceeds:

32 -- 6 April to 1 November
41 -- 18 April to 15 October
50 -- 30 April to 27 September
59 -- 16 May to 8 September

Average daily temperature below:

23 -- 20 November to 21 March
14 -- 13 December to 3 March
5 -- 4 January to 12 February

Normal frost-free period: 4 May to 29 September

a. Length of record unknown.

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Table 2

Precipitation a/
(in inches)

	<u>Average</u>		<u>Average</u>
January	1.4	July	1.5
February	0.9	August	1.3
March	0.8	September	1.0
April	0.8	October	1.2
May	1.4	November	1.6
June	1.8	December	1.5

Annual 15.2

Average number of days a year with snow cover: 146

Average date of first snow cover: 3 November

Average date of last snow cover: 10 April

Average maximum depth of snow cover (based on 10-day
period of greatest depth): 20.5 inches

Period with depth of snow generally 4 inches or more:
12 December to 8 April

a. Length of record unknown.

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II. Soils

The urbanized area of Orenburg is located on undulating terrain that gradually rises to almost 150 feet above the Ural River. Aircraft Plant 47 is in the northeastern part of Orenburg, 3.2 miles north of the Ural River. The plant is situated on relatively flat land about 100 feet above the river level.

The upper layer of sediments in the Orenburg area generally consists of silty sand and sandy loam to a depth of 10 feet. This upper layer is underlain by sand and gravelly sand with a total thickness of 20 to 30 feet. Unconsolidated clay is encountered at depths ranging from 30 to 40 feet.

For installations having foundations less than 10 feet deep, conditions below the level of frost penetration (absolute maximum of 6 feet) range from fair to good depending on the degree of compaction for the characteristic silty sand and sandy loam soils in the area of the aircraft plant. For installations requiring deeper excavations, conditions range from fair to good and generally would not present difficult stabilization problems. The relatively flat terrain in the vicinity of the plant would provide few grading and leveling problems. Drainage problems would be few as the water table varies from 20 feet below the surface in late spring to as much as 50 feet below the surface in summer and fall.

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DATE: 5 January 1965

TO: Ch/G
THROUGH: Ch/GG
FROM: Ch/GG/S
SUBJECT: Research Activity Notice

Subject of
Proposed Climatic and Soil Data
Work:

Problem: To summarize climatic and soil data on conditions affecting construction costs at sites of 20 Soviet aircraft plants: Kazan' (2), Irkutsk, Novosibirsk, Gor'kiy, Komsomol'sk, Tashkent, Voronezh (2), Khar'kov, Kiev, Moscow, Moscow/Fili, Rostov, Orenburg, Ulan-Ude, Semenovka, Taganrog, Leningrad (2).

Requester: Construction Branch, D/MS/RR

K1A

Analyst:

25X1A

Coordination
with or Aid None
from Other
Units:

Due Date: First study by 1 February 1965; others at two-week intervals.

Applicable
Project No.
(if any): 64.1726 D

25X1A

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